Epitomes

Important Advances in Clinical Medicine

Preventive Medicine and Public Health

The Scientific Board of the California Medical Association presents the following inventory of items of progress in preventive medicine and public health. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers, or scholars to stay abreast of these items of progress in preventive medicine and public health that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Preventive Medicine and Public Health of the California Medical Association, and the summaries were prepared under its direction.

Reprint requests to Division of Scientific and Educational Activities, California Medical Association, PO Box 7690, San Francisco, CA 94120-7690

Advances in Prenatal Screening

PRENATAL SCREENING TESTS address two types of problems: maternal diseases that can affect the health of the fetus or newborn, and fetal anomalies or diseases that may or may not have effective treatments. Examples of screening tests for maternal diseases include maternal hemoglobin, rubella titer, Rh factor, tuberculin skin testing, and tests for sexually transmitted diseases. An example of testing for fetal defects is amniocentesis for women older than 35 years.

In recent years, several other maternal diseases that can affect the fetus have been recommended for screening. In 1988 the Centers for Disease Control recommended that all pregnant women receive hepatitis B screening regardless of their risk status. As many as 65% of mothers who test positive for the hepatitis B surface antigen have no known risk factors, and if the mother is positive there is a 90% chance of neonatal acquisition with the attendant morbidity and mortality. Prompt immunization of infants with exposure to hepatitis B can be protective. The Second International Workshop-Conference on Gestational Diabetes and the American Diabetes Association recommend routine 50-gram glucose tolerance testing of all pregnant women between 24 and 28 weeks of pregnancy, while the American College of Obstetricians and Gynecologists recommends screening only for those older than 30 years. Those at high risk for gestational diabetes (history of macrosomatia or of stillborn pregnancy) should be screened with the 50-gram glucose tolerance test at the end of the first trimester. About 25% of women may be asymptomatic carriers of group B *Streptococcus,* and this remains the most common cause of neonatal sepsis in the United States. The protocol for minimizing this risk of neonatal sepsis includes screening all women for the carrier state at 28 weeks' gestation. Those women with cultures positive for group B streptococci are treated only if they fall into one of the following high-risk groups at the time of delivery: preterm delivery before 36 weeks of gestation, premature rupture of membranes more than 12 hours before the beginning of labor, prolonged rupture of membranes more than 24 hours before delivery, a history of other infants previously infected with group B streptococci, signs of amnionitis, or mother receiving immunosuppressant treatment. Earlier treatment does not provide prolonged protection, and treatment of uncomplicated term infants before delivery does not reduce the incidence of sepsis. Infants of mothers who are carriers but who did not receive treatment are monitored for sepsis but not routinely treated.

For one possible neonatal infection, less screening is now recommended. Serial cervical cultures for herpes simplex virus have not been useful for detecting those at risk for transmitting the virus during vaginal delivery. Current guidelines suggest confirming the diagnosis by culture of visible lesions at any time during pregnancy, then a careful examination during labor for any sign of active lesions. If none is present, vaginal delivery is indicated.

Some of the tests that attempt to detect fetal anomalies or congenital diseases offer hope for the prenatal treatment of the fetus. Others offer the option of therapeutic abortion or advanced preparation for a compromised fetus. For example, California requires that maternal serum α-fetoprotein screening be offered at between 15 and 20 weeks for neural tube defects. Ultrasonography and amniocentesis can confirm the anomaly and better clarify the severity. The parents then can make an informed decision regarding the management of the pregnancy. Maternal serum α-fetoprotein abnormalities can also provide clues for trisomy 21 and treatable problems such as gastroschisis. The risk of unnecessary intervention can be avoided if the α-fetoprotein screening is done with the cooperation of a dedicated coordinator, skilled ultrasonographers, and perinatologists. As another example, the screening of mothers at risk for the human immunodeficiency virus can anticipate the need for postnatal infection control precautions or can prepare the parents and physicians for the need for intensive attention to the newborn.

THEODORE G. GANIATS, MD
DAVID M. BAUGHAN, MD
San Diego

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